

Bureau of Economic Analysis

Proposed Plan of Work for FY 1999

(From the budget presented to Congress in February 1998)

Upgrade the Nation's Statistics Maintaining and Improving BEA's Economic Accounts

The Bureau of Economic Analysis (BEA) is the agency within the Department of Commerce that pulls together the diverse stream of economic data that comes from government and private sources and transforms those data into a consistent and comprehensive picture of the economy. This picture is revealed through BEA's national, regional, and international economic accounts, which are widely recognized as the premier tools for macroeconomic analysis and decisionmaking; BEA's flagship product, gross domestic product (GDP), has been described as the most important measure in all economics. Changes in the economy, loss of key source data, and the increasing need to update existing source data have contributed to widening gaps in the source data needed to prepare key components of GDP and national income.

One of the most troubling issues confronting the users of BEA's national economic accounts is the recent growing divergence between GDP, the featured output measure that is derived by totaling the final expenditures for goods and services produced by the U.S. economy, and gross domestic income (GDI), an alternative output measure that is derived by totaling the costs incurred and the incomes earned in the production of those goods and services. In theory, these income-side and product-side measures of output should be equal. In recent years, this "statistical discrepancy" has become alarmingly large, calling into question the accuracy of BEA's estimates of GDP. Since the early 1990's, the growth rate of the U.S. economy as measured by real GDI has been significantly higher than the growth rate as measured by real GDP. This difference has been the subject of considerable concern by the Council of Economic Advisers and others, with some analysts maintaining that the higher growth rate of real GDI is more consistent with other characteristics of the economy. Because these two measures produce quite different pictures of productivity growth and projected budget deficits, this issue has important implications for market participants and policymakers.

Concern about the statistical discrepancy and other economic measurement issues that affect business and public policy has been expressed by a wide range of observers:

- Federal Reserve Board Chairman Alan Greenspan, in a speech to the American Economic Association, expressed concern about the impact that biases in price measurement have on monetary policy: "...in a modern monetary economy, accurate measurement of aggregate price levels is of considerable importance, increasingly so for central banks whose mandate is to maintain financial stability. Accurate price measures are necessary for understanding economic developments, not only involving inflation, but also involving real output [GDP] and productivity."

- The minutes of the August 19, 1997, meeting of the Federal Open Market Committee illustrate the problems caused by the statistical discrepancy in assessing sustainable growth in GDP and productivity: "...the available evidence suggested that the profits of business concerns generally had continued to increase in the second quarter, implying that productivity had been rising at a pace that exceeded published estimates by a significant margin."
- Business Week, referring to the statistical discrepancy, noted that "American economic policy is being made in the dark. The result is a series of shocks to both the economy and the body politic. In the past year, flawed data made it difficult to distinguish between windfall or sustained revenue gains and led to a miscalculation on tax revenues flooding into federal coffers. The result was a budget negotiation that was much more partisan and ugly than necessary."
- In a U.S. News & World Report editorial, David Gergen stressed the need to update and improve economic statistics, especially GDP, and pointed out that statistical programs have been "hobbled by a chronic lack of financial support..."

BEA's Strategic Plan, as outlined below, addresses these issues, including source data initiatives to reduce the statistical discrepancy, the further development of hedonic indexes to reduce bias in measures of prices, the capitalization of software, and other changes to update and improve the Bureau's economic accounts.

Updating and Improving BEA's Source Data for GDP and National Income BEA proposes to address the statistical discrepancy and other issues affecting the accuracy and coverage of its economic accounts by undertaking the following source data improvement initiatives, which are aimed at upgrading and modernizing GDP and the Nation's other key statistics to provide the economic intelligence required in today's information age. The source data used in compiling and estimating GDP remain woefully out of date. Examples include the absence of comprehensive and consistent data on rapidly growing sectors such as computer software and certain financial services. Equally important, however, are the changes in the structure of the entire economy resulting from corporate downsizing, technological change, and the devolution of Federal government functions to State and local government. These changes have not only affected the composition and structure of the U.S. economy but render the source data for tracking it increasingly out-of-date.

- A. **Improved measures of services and other key product-side components** Although source data for expenditures on final product are more complete than source data on incomes earned in production, gaps in the coverage of expenditures on services and other rapidly growing components of GDP require immediate attention. BEA must address the increasing concerns over the divergence between product- and income-side measures of GDP (and productivity). Accordingly, BEA is proposing the following source data initiatives, which have been coordinated with Census and are directed at providing an up-to-date, consistent, and comprehensive picture of today's--rather than yesterday's--economy:
1. **Information sector:** Although changes in computer production and sales often have a larger impact on the economy than changes in motor vehicles sales, available data on the computer industry is inadequate. For example, there are no comprehensive or consistent data on inventories, sales to consumers, or total investment in computers. This initiative calls for a new annual survey of the information sector that will fill this gap in coverage.
 2. **Construction:** Demographic change and downsizing have resulted in a shift in the composition of construction away from new homes and factories toward remodeling and retrofitting. A proposed annual survey of construction would provide an

accurate picture of the size and contribution to GDP growth of all construction activity and provide important information on the impact of demographic change and downsizing. (See also the discussion below on nonresidential construction and downsizing.)

3. **Transportation:** In recent years, the transportation sector has been subject to massive changes, including the rapid rise in air courier services, dramatic changes in the structure of the airline industry, constant changes in airline prices, and increased contracting out of trucking services as firms attempt to downsize and seek out lower cost suppliers. A survey conducted at least once a year is urgently needed for this rapidly changing sector.
4. **Nonmerchant wholesalers:** Changes in transportation, technology, and the structure of industry have dramatically changed the face of warehousing. Air courier services, just-in-time delivery systems, and overseas assembly operations have all contributed to this change. In the past, it was sufficient to get an estimate of these wholesalers' inventories once every 5 years from the economic census and extrapolate using sales. Now, use of such extrapolators may seriously distort the picture of economic growth, artificially magnifying cyclical swings in economic activity and distorting the outlook for future economic activity by overstating or understating inventory/sales ratios.
5. **State and local government:** We currently have incomplete and often inconsistent data on State and local governments, as States and localities shoulder a bigger share of government programs, ranging from welfare to investments in classrooms. This data problem will only get worse as the Federal government "devolves" additional programs to State and local governments. Such data is important not only for producing accurate estimates of GDP and State personal income, but also for assessing the effectiveness of this devolution of authority. This initiative calls for the introduction of a quarterly survey of government expenditures and investments at the State and local levels.
6. **Nonresidential construction:** In an attempt to downsize and control costs, firms have increasingly turned from the construction of new plants, where we have adequate data, to the retrofitting and upgrading of existing plants, where we have little direct data. In addition, there are problems in measuring the prices of new plants and improvements to existing plants. Much of the value of new construction is in the form of more efficient production layouts, more efficient heating and cooling systems, and a host of other improvements that cause the price per square foot to rise. This initiative would expand the monthly Value Put in Place Survey to cover improvements and prices.
7. **Financial Data:** While financial data on individual companies is abundant, there is no comprehensive and consistent financial data available on the domestic operations of companies accounting for close to 70 percent of the economy. Many of these industries are in services and are among the fastest growing components of the U.S. economy, including brokerage, investment counseling, insurance, and other financial services. Although many of these services have existed for some time, there has never been adequate statistical coverage of these industries. Now the rapid growth, rate of technical and structural change, and policy importance of these services to financial markets and the health care industry make timely and accurate data on them more urgent than ever. This initiative would expand Quarterly Finance Report (QFR) coverage beyond manufacturing and distribution to provide financial data on the sectors of the economy experiencing the most rapid change.

8. **Capital Expenditures:** Firms increasingly are renting capital equipment rather than buying it. As a result existing data on capital expenditures fail to capture the capital outlays associated with new companies. This initiative calls for the expansion of the Annual Capital Expenditures Survey (ACES) to generate data on the investment behavior of newcomer firms and improve data on the leasing of capital goods.
- B. **Improved measures of compensation and other key income-side components** BEA is proposing the following source data initiatives to strengthen the measurement of national and personal income:
1. **Improved estimates of employer-provided benefits and other forms of nonwage compensation:** BEA is working with BLS to improve estimates of employer cost of health insurance and other nonwage-and-salary compensation. Nonwage-and-salary income is estimated to account for nearly 20 percent of the compensation of employees, yet the source data for this component of income, which come from a number of sources, are in many instances either incomplete, inconsistent, not timely, or based on inadequate samples. Work plans call for: 1) Extension of existing coordination efforts between BEA and BLS to include joint estimation of all benefit categories, including pensions; and 2) Development of a coordinated and comprehensive system to collect data on employer-provided health care.
 2. **Improved estimates of wage and salary income:** BEA is working with BLS to expand coverage of the BLS monthly establishment survey to cover wages and salaries for all workers. BEA currently has to estimate wages and salaries for nonproduction and supervisory workers for its quarterly estimates of national income and State personal income and its monthly estimates of personal income. **Such workers account for nearly half of total wages and salaries in the economy, and implementation of these plans could significantly improve the accuracy of, and reduce future revisions to, this key component of national and personal income.**
 3. **Improved estimates of profits, proprietors' income, interest, rent, and other property income:** One of the major problems with BEA's estimates is that most of the data on property income are ultimately based on tax data that are subject to large "misreporting adjustments." In recent years, the Internal Revenue Service has had to eliminate its Taxpayer Compliance Measurement Program, the only statistically valid source for most of these adjustments. This initiative calls for various statistical simulation and matching exercises using Census Bureau and IRS data to develop new misreporting adjustments as well as other adjustments to improve BEA's regional and industry accounts estimates, including more timely and comprehensive company-establishment link tabulations that provide both industry and geographic detail.

Updating and Improving Statistical Methods, Concepts, and Structure In addition to these source data initiatives directed toward addressing the statistical discrepancy, funding is requested to move forward on other key initiatives from BEA's strategic plan for improving its economic accounts.

- A. **New and Improved Measures of Output and Prices** These measures will better reflect changes in the nature of output and the organization of production. Such improvements are critical to support informed National debate on such issues as the economy's long-term noninflationary growth potential and the impact of technological change on economic growth and productivity.
1. **Integrating and extending BLS improvements in the CPI into the national accounts**
As part of its efforts to address issues raised by the Boskin Commission Report, BLS

has developed an experimental geometric mean index that addresses what has been described as “lower-level” substitution bias in the CPI and is considering introducing it in the CPI beginning in January 1999. In 1996, BEA introduced its chain index measures that address “upper-level” substitution bias in real GDP and prices. Although BEA uses a number of data sources for deflating GDP, a large share of consumer spending in GDP is deflated using detailed CPI data; thus, lower-level bias in the CPI can have a significant impact on BEA’s estimates of real GDP.

- o BEA will have to develop historical time series to extend the new BLS series back until at least the 1970s to maintain continuity in the national income and product accounts. This initiative will provide funds for BEA to work with BLS on extending the new experimental indexes so that BEA can move forward expeditiously in incorporating these improvements when they are introduced into the CPI.

2. **Quality adjustment of output and prices** An increasing share of output is in sectors, such as services and high-technology products, where output is difficult to define and measure. In recent years, concern has continued to grow about the possibility that existing price indexes for these difficult-to-measure sectors are biased because they do not adequately capture the effect of quality changes. If problems in measuring quality changes cause the rate of price increase to be overstated, the measure of real (price-adjusted) GDP will be understated, as will measures of productivity change and the economy’s long-term, sustainable, noninflationary growth rate. Moreover, overstatement of inflation has direct implications for the Federal budget.

- o The concern about bias is especially important for relatively fast growing, “high-tech” products, such as computer software (see B, below) and telecommunications equipment. With funding for this initiative, BEA would extend its pioneering work on statistically-based quality adjustments for computers and, more recently, for semiconductors and telephone switching equipment, by working with BLS and other researchers on the deflation of other “high-tech” products, such as cellular telephones and computer software.
- o BEA will also be able to extend its conceptual and empirical work with BLS and other researchers on developing new concepts and methods for measuring difficult-to-measure services, such as finance, insurance, and medical care.

3. **Updating the structure and organization of the accounts** Change in the U.S. economy has affected not only the composition of output, but also the way output is produced and distributed. The rapid pace of change has highlighted the need for improved measurement and classification systems. This initiative would provide for continued work in completing and implementing an updated industry classification system, in developing a clearer picture of the activities of nonprofit institutions, and in providing a more complete picture of the activities of government.

- o **Implement the new industry classification system** The present Standard Industrial Classification System--the one on which BEA’s GDP and gross state product by industry estimates, its input-output accounts, and its foreign direct investment and services data are based--presents an outdated picture of the organization of economic activity. Work toward a new classification system--the North American Industry Classification System

(NAICS)--was begun in 1992 and has been carried forward jointly with our NAFTA partners. The design of the new system has now been completed and work must begin on collecting and processing data under it. For BEA, next steps include revising the structure and methodologies for its GDP, GDP-by-industry, input-output, and regional estimates to take into account the revised source data that it will be receiving from Census, BLS, IRS, and the various other agencies and organizations providing industry data to the Bureau. In addition, BEA has begun to revise its own foreign direct investment data collection and processing system.

- o Update the accounts by providing clearer, separate pictures of nonprofit institutions and households: The category that is usually called "consumer spending" makes up two-thirds of GDP, and its large share often makes the factors that influence it critical to determining the course of the economy. Yet about 10 percent of the category is not spending by consumers, but spending by nonprofit institutions that are subject to different influences and react differently than the households that are usually thought of as consumers.

A National Academy of Sciences workshop on economic accounts for nonprofit institutions favored a proposal to develop a separate accounting for nonprofit institutions. The Federal Reserve Board, long interested in the portfolios of nonprofit institutions, published initial estimates of the financial transactions and holdings of nonprofit institutions in late 1994, which it continues to update and improve. With funding for this initiative, BEA would develop preliminary estimates that separate nonprofit institutions from households in its economic accounts. The estimates, which complement the Federal Reserve Board's work, would have the dual benefit of providing a fuller view of the role of nonprofit institutions--in philanthropy, education, and health, for example--and a clearer view of households.

- 4. Update the accounts by providing a more comprehensive picture of government Government agencies--Federal, State and local--play a changing role in the economy. They produce goods and services, tax and make income transfers, build bridges and put other infrastructure in place, and own a significant share of the Nation's wealth. BEA and the Federal Reserve Board have produced a first view of comprehensive accounting for the government sector by putting together current accounts (for production, income, and spending), accumulation accounts, and balance sheets (wealth). The two organizations have identified the further work needed to bring this comprehensive view of government to publishable/useable quality. With funding for this initiative, BEA would build on its new treatment of government capital incorporated in the 1996 comprehensive revision of the national accounts and carry the work to completion.

- B. Better Measures of Investment, Saving, and Wealth In the national income and product accounts (NIPA's), investment has traditionally been limited to business investment in inventories, structures, and equipment, but a broader view of the Nation's wealth would include highways, dams, schools, and other public infrastructure, natural resources, and intangible assets, such as computer software and, even more broadly, training and education. A broader definition of investment would help in understanding the sources of economic growth and the returns to, and adequacy of, various types of public and private investment. In its 1996 comprehensive revision, BEA moved to bring the United States into closer alignment with international guidelines by treating government investment in plant and equipment symmetrically with private investment. This initiative would further update

the accounts to include investments in software, develop measures of government inventories, and better integrate capital stock and flow estimates in the accounts.

1. **Expand and update the coverage of investment by developing a comprehensive accounting for software:** Concepts and statistical measurement have not kept pace with the fast-changing computer software industry. As a result, the economic accounts do not have the full, explicit picture of expenditures on software that is needed to accurately gauge changes in, and the performance of, today's economy. Indeed, changes in tax laws regarding the capitalization of computer software may well be contributing to the statistical discrepancy through distortions in the tax-based data on profits that BEA uses in estimating national income. A lasting solution will require a comprehensive program of work in FY 1999, as follows:
 - o Develop comprehensive estimates of purchased software on the basis of existing source data (and work with the Census Bureau to expand coverage and timeliness as needed) and a methodology that avoids double-counting software bundled with computer hardware purchases and purchases by consumers and governments.
 - o Develop a new quality-adjusted price index for use in obtaining real measures of software.
 - o Develop estimates of the value of software developed in-house.
 - o Develop improved values of exports and imports of software.
 2. **Develop measures of government inventories:** The government has large holdings of inventories, ranging from crude petroleum held by the Strategic Petroleum Reserve to fuels and munitions held for military purposes, road abrasives, and office supplies. BEA's treatment of government and private inventory investment remains inconsistent. The accumulation of inventories by general government and by government enterprises of both Federal and State and local governments continues to be an unidentified component of government consumption expenditures. Separate estimates of the level of and change in government inventories would facilitate analyses of short-term changes in demand and production in the U.S. economy. BEA proposes to undertake a project to develop separate measures of both Federal and State and local government inventories and inventory investment, annual and quarterly, in current and real dollars.
 3. **Better integration of capital stocks and flows in the accounts:** Differences in source data, methods, and concepts result in inconsistencies among BEA's national income and product account and capital stock estimates and the Federal Reserve Board's flow of funds accounts and balance sheets. These inconsistencies present significant difficulties for researchers and policymakers attempting to perform integrated analyses of, for example, trends in productivity, domestic and international capital flows, returns to investment, the adequacy of domestic saving and capital formation, and the effects of changes in financial holdings on consumer and business spending. BEA proposes to undertake a project to improve the data sources and methodology and to refine the concepts to make the capital stock and flow measures more internally consistent.
- C. **Improved Measures of International Transactions:** Increased integration in world markets for goods, services, and capital, in combination with major advances in computer and communications technology, have resulted in gaps in BEA's coverage of international

transactions. These gaps pose difficulties for the analysis of trade, monetary, and regulatory policy.

In the area of services, most of the largest gaps in coverage have been closed in recent years through the development of new surveys or the extension of existing surveys, but insufficient detail for some major services categories continues to hamper analysis, and lack of quarterly data makes estimates in the accounts suspect and subject to large revisions. In the capital accounts, BEA has made good progress in improving coverage through data exchanges with other countries and improvements in surveys in cooperation with the Treasury Department and the Federal Reserve. Also in cooperation with the Federal Reserve, BEA has begun to report on international flows of U.S. currency. However, large gaps remain in the coverage of U.S. portfolio investments abroad and foreign portfolio investments in the United States. In addition to these existing gaps, new gaps are emerging through growth in new financial instruments that are not separately identified or fully covered by the existing data collection system.

This initiative would build on previous work in this area by extending and revising existing surveys and developing new surveys to improve the measurement of:

1. **Improved coverage of volatile and rapidly growing services** As the size of trade in services has grown, so has the complexity of measuring it. Although BEA has dramatically expanded coverage of international services in recent years, the absence of sufficient detail for some major services categories hampers the analytical usefulness of the data, and the lack of timely quarterly indicators will make the services data increasingly inadequate and ultimately subject to large revisions.

To improve coverage and reduce the size of revisions in the international services components of the GDP accounts, the quarterly balance of payments accounts, and the monthly releases on trade, BEA would undertake the following:

- o **Multinational trade in services:** Process and integrate data from BEA's revised surveys of U.S. direct investment abroad to provide information on the growing trade in "affiliated" services by type.
 - o **Large and volatile services trade data:** Develop a pilot quarterly survey for the most important services covered by the existing annual survey of selected services.
2. **New measures of new and growing financial instruments** The globalization of international financial markets has been accompanied by enormous growth, much of it in direct securities transactions--that is, transactions that are not channeled through U.S. brokers, banks, and other financial intermediaries--and in new financial instruments such as derivatives. With only partial funding for improvements, BEA has been forced to focus on data exchanges with foreign central banks and other interim improvements to the measures of investment income and capital flows. These improvements have helped, but the need for a comprehensive revamping of the collection system has taken on new urgency with the passage of time.

This initiative would allow BEA to:

- o **Intermediated portfolio investments:** Work with Treasury and the Federal Reserve System to improve the capture of information on foreign stocks, bonds, and other portfolio investments made through U.S. brokers, banks, and other financial institutions:

- Strengthen the existing system of collecting data on portfolio investment by expanding coverage, improving compliance, and eliminating gaps and overlaps in coverage between foreign direct and portfolio investment.
- o Directly channeled portfolio investments: Implement a coordinated international system of data collection to better capture information on portfolio investments made directly with unaffiliated foreign residents. BEA and Treasury--in cooperation with the International Monetary Fund and many other nations--have completed work on common definitions as the basis for collecting consistent data. The next step is to modify the data collection systems of participating countries to make it possible to fill the existing gaps in coverage by exchanging data among organizations and countries. Funding is required for BEA to implement this step with respect to its international data collection system.
- o Derivatives: Develop measures of new financial instruments, such as derivatives, that cut across both the direct and indirect channels of investment. BEA will work with Treasury and the Federal Reserve System to develop estimates of cross-border transactions and positions in financial derivatives. The estimates cannot be derived from existing data sources; therefore, a new survey on derivatives will have to be developed.